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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/553,140	04/20/2000	Michael J. Berman	99-230	4444

7590 10/06/2003

Ralph Viseli  
Intellectual Property Law Department  
LSI LOGic Corporation M/S D-106  
1551 McCarthy Boulevard  
Milpitas, CA 95035

EXAMINER
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BALI, VIKKRAM

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 10/06/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/553,140

Applicant(s)

BERMAN, MICHAEL J.

Examiner

Vikram Bali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

In response to the amendment filled on 7/24/2003, all the amendment have been entered and the action follows:

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 8-9 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over O'Boyle et al (US 5640242).

With respect to claim 1, O'Boyle discloses a high speed imaging device (CCD, see col. 3, lines 10-12), comparison of the high speed image to each one of a plurality of stored patterns, (see col. 3, lines 25-27, comparing the CCD output to the reference characteristics) and converting the high speed image to the layer thickness, (see col. 32, lines 27-29, providing an output corresponding to the thickness of the thin film) as claimed. However, he fails to explicitly disclose the image patterns, as claimed. But, as stated in the col. 3, lines 25-27, that the image is compared to the set of reference characteristics it is obvious to one ordinary skilled in the art that the image is compared

to the reference images. It would have been obvious at the time of invention to simply compare the output images to the plurality of reference images to come up with the desired image in the inspection process.

With respect to claim 2, he further discloses: conventional light source, a high speed camera, (see col. 3, lines 19-21, the tungsten halogen light source, and the col. 3, lines 10-12, CCD as the high speed camera) as claimed.

With respect to claim 8, he further discloses: layer thickness is performed in situ, (see col. 1, lines 5-7) as claimed.

Claims 9 and 12 are rejected for the same reasons as set forth for the claims 8 and 2, because claims 9 and 12 are claiming the apparatus for the method of the claims 8 and 2.

3. Claims 3-7, 10-11, 13-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Boyle et al (US 5640242) in view of Bibby, Jr. et al (US 6361646).

With respect to claim 15, O'Boyle discloses the invention substantially as disclose and as described above for claim 1. However, he fails to disclose: stopping CMP when the layer measurement ...end point, as claimed. Bibby in endpoint detection for CMP teaches stopping CMP when the layer measurement ...end point, (see figure 6,

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and col. 12, lines 34-45, and for the broadest view of the invention see the abstract the last 6 lines) as claimed.

It would have been obvious to one ordinary skilled in the art at the time of invention to combine the two references as they are analogous because they are solving the similar problems in CMP. The motivation of doing this will be determining when an end point has reached (see Bibby col. 2, lines 63-68).

Claims 16 and 22 are rejected for the same reasons as set forth for the claims 2 and 8, because claims 16 and 22 are claiming similar subject matter as claimed in claims 2 and 8.

With respect to claims 17-21, Bibby further teaches: the light source with a spectrum between 200 and 1000 nm (see col. 6, lines 13-17) and the thickness measurements using the pixel conversion (see col. 7, lines 20-27) as claimed.

Claims 3-7, 10-11 and 13-14 are rejected for the same reasons set forth for claims 17-21 because claims 3-7, 10-11 and 13-14 are claiming similar subject matter as claims 17-21.

Claims 23-28 are rejected for the same reasons as set forth for the claims 15-22, because claims 23-28 are claiming the apparatus for the method of the claims 15-22.

***Response to Arguments***

4. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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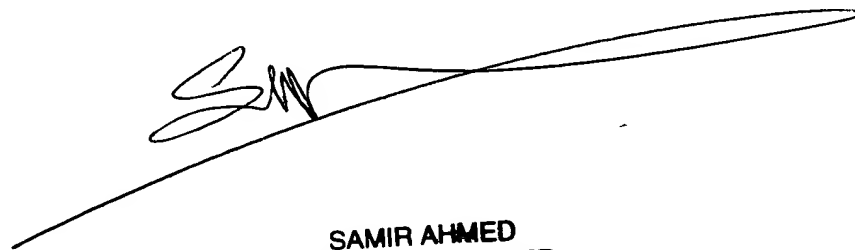
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikkram Bali whose telephone number is 703.305.4510. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703.308.6604. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9314 for regular communications and 703.872.9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.306.0377.

Vikkram Bali  
Examiner  
Art Unit 2623

vb  
October 1, 2003

A handwritten signature in black ink, appearing to read 'SAM', is written over a long, horizontal, slightly wavy line that spans across the middle of the page.

**SAMIR AHMED**  
**PRIMARY EXAMINER**